CELL PHONE USE IN MOTOR VEHICLE CRASHES

DATA FROM
WISCONSIN MOTOR VEHICLE
ACCIDENT
REPORT FORM (MV4000)

WISCONSIN STATE PATROL MAY - OCTOBER 2002

WISCONSIN DEPARTMENT OF TRANSPORTATION
DIVISION OF STATE PATROL
DIVISION OF MOTOR VEHICLES
BUREAU OF TRANSPORTATION SAFETY

MAY 2003

June 11, 2003

The Honorable Jerry Petrowski Wisconsin State Assembly PO Box 8953 Madison, Wi 53708-8953

The Honorable Tony Staskunas Wisconsin State Assembly PO Box 8953 Madison, Wi 53708-8953

Dear Rep. Petrowski and Rep. Staskunas;

The Wisconsin Department of Transportation (DOT) is pleased to provide you with its report on cell phone use at motor vehicle crashes. The report represents a combined effort by the Division of State Patrol, the Division of Motor Vehicles and the Bureau of Transportation Safety.

We appreciate your efforts in considering legislation related to cell phone use by motorists in Wisconsin and your request to gather data to better understand some of the questions raised during legislative hearings. Hopefully this report can provide some assistance in determining the next step in studying the cell phone issue.

On behalf of the DOT staff who worked on this report, I want to thank you for the opportunity to work with your offices and we look forward to continued dialogue.

Sincerely,

Benjamin H. Mendez, Jr. Lieutenant Colonel Wisconsin State Patrol

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THE TASK

The Wisconsin State Patrol (State Patrol), in conjunction with the Department of Transportation's Division of Motor Vehicles (DMV) and Bureau of Transportation Safety (BOTS) and at the request of Wisconsin State Representative Jerry Petrowski, surveyed a limited number of crashes in Wisconsin in an attempt to determine if there was any relation between the use of cell phones by drivers involved in crashes and the crashes themselves. The results of the survey are to be used as a tool for legislators, law enforcement, and traffic safety professionals in understanding cell phone use by Wisconsin motorists.

This survey was not intended to provide an in-depth study and analysis of the use of cell phones by motorists in Wisconsin. Rather, its intent was to provide an introduction to the issue, or what some call the "problem", of motorist cell phone use and to prompt further discussion, research and queries. The issue of cell phone use by motorists is complex enough to warrant further review of many variables, including driver demand and/or need for cell phones, driver education, other driver distractions, varying driver abilities, physiological factors of cell phone use, cell phone reporting procedures, and a review of empirical data.

THE IMPETUS

Three legislative proposals related to limiting motorists' use of cell phones or collecting data on cell phone use were drafted during Wisconsin's 2001-2002 legislative session:

- 2001 Assembly Bill 202 (Rep. Staskunas) would have prohibited a person who is driving under an instructional permit or probationary license from operating a motor vehicle while using a cellular or other mobile telephone, except to report an emergency, regardless of whether use of the telephone interferes with the operation of the vehicle.
- 2001 Assembly Bill 240 (Rep. Colon) would have prohibited a person from operating a motor vehicle (other than an authorized emergency vehicle), except to report an emergency, while using a hand-held cellular or other mobile telephone, regardless of whether use of the cell phone interferes with the operation of the vehicle.
- 2001 Assembly Bill 201 (Rep. Staskunas) would have required the Wisconsin Department of Transportation (WisDOT) to record information on the Wisconsin Motor Vehicle Accident Report Form (MV4000) on any use of cellular or other mobile telephone that contributed to the motor vehicle crash.

All three of these proposals received hearings at the Assembly Highway Safety Committee under the chairmanship of Rep. Jerry Petrowski. The testimony provided at each of the three hearings included information both in support of and in opposition to the proposals, and included some testimony provided "for information only".

Specifically, testimony included:

- Anecdotal information about crashes caused by motorists using cell phones.
- There are conflicting studies from other states about the effect of cell phone use on safe driving.
- Wisconsin statutes already permit law enforcement officers to cite for "inattentive driving", which would include use of a cell phone, under s.346.89(1), Wis. Stats., which states that "No person while driving a motor vehicle shall be so engaged or occupied as to interfere with the safe driving of such vehicle."
- Public education and information is a necessary component of any legislation related to motorists' cell phone use.
- Is cell phone use enough of a distraction to warrant prohibiting or limiting its use by motorists?
- Other activities performed by motorists while driving, such as eating, tuning a radio or tending to children, are just as distracting and potentially dangerous, and perhaps even more so, than the use of cell phones.
- Hands-free cell phones are not less distracting than hand-held cell phones.
- The use of cell phones is increasing as technology improves and the cost of cell phones decreases.
- It may be difficult for law enforcement officers to identify that a driver using a cell phone is operating with an instructional and/or probationary driver's licenses.
- Should citizen band radios (CB's) also be banned?
- It may be difficult for law enforcement officers to identify that the motorist cell phone use was related to an emergency.
- Is it necessary and possible to collect phone records for a cell phone that had been in use just prior to a motor vehicle crash?
- How does common sense fit into any ban or limit of cell phone use?
- Primary enforcement of any cell phone ban or limit would give law enforcement too much discretion for traffic stops.
- Will driver-reported (i.e. self-reported) cell phone use information collected at a motor vehicle stop be accurate?

After a review of the legislative proposals and the resulting testimonies, Rep. Petrowski and his colleagues determined that more information was necessary if the most appropriate legislation was to be crafted and proposed for Wisconsin. Thus, the State Patrol was requested to assist in gathering additional information through a survey of cell phone use during motor vehicle crashes.

SURVEY PARAMETERS

The survey conducted by the Wisconsin State Patrol for six months during the summer and autumn of 2002 focused on the use of cell phones during motor vehicle crashes. Information was obtained at the crash site by noting motorist cell phone use by the drivers involved in the crash. The data collected was recorded as driver "self-reporting" responses and categorized on the Wisconsin Motor Vehicle Accident Report form known as the "MV4000" in the data fields titled "Special Study."

The results of this survey are limited by the detail of the queries, the number of the crashes queried, and the types of highways on which the crashes occurred, as well as the fact that just one law enforcement agency, the Wisconsin State Patrol, conducted the survey. Those limitations do not diminish the reliability or importance of the survey data, but they do caution the overall applicability of the results.

It is important to note that the data on cell phone use for this survey is collected on a *per crash basis*, not per vehicle basis. One MV4000 report is completed for a crash, as a single event, which may involve multiple vehicles and drivers. The MV4000 contains some identification of separate vehicles, drivers, and citations, but general conditions of the crash are identified as applicable to the entire crash as a single event. This survey, designed as a base information survey, does not distinguish among the individual drivers or vehicles as to cell phone use; the cell phone information is related to the crash as a whole.

THE METHODOLOGY

The survey / data collection was conducted by troopers and inspectors of the Wisconsin State Patrol between May 1, 2002, and October 31, 2002. The State Patrol was chosen for the study due to its ability to quickly respond to the request for the survey and to provide controlled procedures to maintain the integrity of the data. The State Patrol could guarantee an almost 100% reporting rate for cell phone use and could provide immediate and comprehensive training on the data collection, field supervision of the data collection, occasional review of the submitted data, effective dialogue with the Division of Motor Vehicles (DMV) on the progress of the data collection and coordinated analysis of the data with DMV and the Bureau of Transportation Safety (BOTS).

The State Patrol trooper and inspectors collected the cell phone use data as part of every MV4000 completed for each crash to which they responded. By statute, the MV4000's are submitted to DMV for recording within 10 days of the crash, so

cell phone data did not have to be separately submitted to DMV, thus increasing response rate and efficiency.

The DMV was charged with the task of receiving the data, compiling the data, and submitting the data in a usable format to analysts of the State Patrol and BOTS. The State Patrol assumed the lead analysis of the data, conferring with DMV and BOTS on the data submitted, what additional queries were to be completed, and what the final analysis was to contain. Draft data was available for initial analysis during February 2003, with the final report completed in May 2003.

Cell phone use was recorded for all drivers, pedestrians, motorcyclists and bicyclists involved in the crash but not for cell phone use by a *passenger* of a vehicle involved in a crash.

The data was recorded in four *Special Study* bubbles in Field 19 of the MV4000:

- Bubble 1 No cell phone was in use at time of crash.
- Bubble 2 A cell phone (of any type) was in use at the time of the crash but it <u>was not</u> a possible contributing circumstance. For example, if Driver A who was talking on a cell phone was rear-ended while stopped at a red light by Driver B who was not using a cell phone, Driver A was not at fault and the information does not indicate that his/her use of the cell phone was a possible contributing circumstance in the crash.
- Bubble 3 A hand-held cell phone was in use at the time of the crash and it may have been a possible contributing circumstance in the crash.
- Bubble 4 A hands-free cell phone was in use at the time of the crash and it may have been a possible contributing circumstance in the crash.
- NOTE: At least one bubble must be marked for each crash. Only one bubble may be marked per crash unless bubbles 3 and 4 apply, in which case bubble 3 and bubble 4 may be marked. If more than one person involved in the crash was using a cell phone at the time of the crash and bubble 2 and bubble 3 or 4 could be marked, mark only bubble 3 or 4. For example, if Driver A was using a cell phone but it was not a possible contributing circumstance in the crash for that driver, but Driver B was using a hand-held cell phone and it was a possible contributing circumstance in the crash, mark only bubble 3 and do not mark bubble 2 for Driver A.

During routine completion of any MV4000, not just during the time of the survey, *Possible Contributing Circumstances* (PCCs) are recorded on the MV4000. These PCCs, in the officers' opinion, are *Driver Factors*, *Vehicle Factors* or *Highway Factors* that may have contributed to the cause of a crash. If recorded on the MV4000, these factors usually result in a citation(s) issued to a driver or drivers involved in the crash. At any time, cell phone use can be recorded under *Driver Factors* in the general category of *Inattentive Driving*. Factors such as

eating food, tuning a radio, looking away from the roadway, or fatigue, in addition to cell phone use, can be included in *Inattentive Driving* though they are not specifically identified on the MV4000. All the PCC choices listed under *Driver Factors* as identified on page 4 of the MV4000 include:

- Exceeding Speed Limit
- Speed Too Fast / Condition
- Fail to Yield Right of Way
- Inattentive Driving
- Following Too Close
- Improper Turn
- Left of Center
- Disregarded Traffic Control
- Improper Overtaking
- Unsafe Backing
- Failure to Have Control
- Driver Condition
- Physically Disabled
- Other

The State Patrol completed 2,691 MV4000 reports (i.e. 2,691 crashes) during the six-month survey time period. Over 96% of the completed reports included the required cell phone use information. The distribution of completed MV4000 reports was proportional throughout the districts to the number of officers assigned to each district and the amount of traffic generally characteristic of each district:

District 1 / DeForest 741 crashes
District 2 / Waukesha 231 crashes
District 3 / Fond du Lac 415 crashes
District 4 / Wausau 377 crashes
District 5 / Tomah 339 crashes
District 6 / Eau Claire 432 crashes
District 7 / Spooner 156 crashes

BENCHMARKS

The data collected by the State Patrol for this study is counted as *number of crashes*, not number of cell phones in use or number of vehicles. The MV4000s are completed in terms of a crash, and one MV4000 report may include information on multiple vehicles, multiple drivers and multiple cell phones. Thus, the benchmark statistics provided for comparison are also in units of crashes except where other units of measurement are appropriate.

Wisconsin Department of Transportation 2002 records state that of the total 112,664 miles of highway in Wisconsin, 581 miles (0.5%) are rural interstate, 164 miles (0.15%) are urban interstate, 9,729 miles (8.6%) are rural state highways and 1,278 (1.1%) are urban state highways. This 11,752 miles (10.4%) represents an approximate total of the Wisconsin highways on which the State Patrol enforces traffic laws and encounters crashes. However, the State Patrol does not patrol *all* of the miles represented by urban interstate highway totals or urban state highway totals. The extent of the applicability of the cell phone survey data from State Patrol (completion of MV4000s) to the entire state and all crashes, must be reviewed in that context.

To adequately determine the applicability of the data collected from the State Patrol survey, the data must be compared to statewide benchmarks. The State Patrol is one of approximately 600 Wisconsin law enforcement agencies that have the authority and opportunity to complete MV4000s. The amount of data collected (i.e. total number of completed MV4000s) by the State Patrol is limited by the Patrol's primary enforcement on interstate, federal and state highways and state trunk roads. These types of highways are characterized by heavy daily traffic volumes but with less vehicle congestion than is characteristic of urban highways and city and village streets due to roadway configuration, higher speeds, and limited access. Though the congestion found on city and village streets contributes to crash frequency, the increased speed at which vehicles travel on rural interstate and state trunk roads contributes to crashes of a greater severity than those occurring on urban roads.

TABLE I, below, identifies the breakdown of crashes statewide, by severity and type of highway on which the crashes occur. There were 129,072 total crashes reported on MV4000s by all law enforcement agencies in 2002, 723 (0.6%) of which resulted in a total of 805 fatalities. Generally speaking, crashes occurring on the types of highways that the State Patrol routinely patrols accounts for approximately 38% of the total highways identified: rural interstate crashes (3%), rural state highway crashes (20%), urban interstate crashes (3.4%) and urban state highway crashes (12%). For each highway category there may be multiple types of law enforcement responses, but the State Patrol focuses its traffic enforcement on interstate, federal and state highways and state trunk highways.

TABLE I 2002 STATEWIDE CRASH STATISTICS

- 129,072 total crashes in Wisconsin
 - o 8,922 (7%) alcohol-related crashes
 - o 20,660 (16%) speed-related crashes
- 723 (0.6%) fatal crashes with 805 people killed
- 39,634 (31%) injury crashes with 57,776 people injured
 - 4,595 crashes with type A incapacitating injuries (11.6% of total injury crashes)
 - o 5,880 persons with type A incapacitating injuries (10% of total persons injured)
- 88,715 (68.7%) property damage crashes
- 45,769 (35.5%) urban city street crashes
- 4,382 (3.4%) urban interstate crashes
- 15,483 (12%) urban state highway crashes
- 4,367 (3.4%) rural city street crashes
- 4,036 (3%) rural interstate crashes
- 26,317 (20.4%) rural state highway crashes
- 15,575 (12%) county highway crashes
- 13,143 (10%) town road crashes

TABLE II below, illustrates that while the State Patrol may investigate a limited number of crashes, the crashes they investigate are often more severe crashes. While almost 4.6% of the total 2002 crashes statewide were reported by the State Patrol, almost 9.3% of the *fatal* crashes for a full year were reported by the State Patrol. This data indicates that the State Patrol proportionally encounters more severe crashes on the high speed roads it patrols. That same crash characteristic is evident in the data for county sheriff's offices that also primarily patrol non-urban roads. While county sheriffs' offices reported almost 41% of the total 2002 crashes, they reported on over 68% of the fatal crashes. The data for local police departments is the converse, showing a higher percentage for total crashes but a lower percentage for fatal crashes. Cell phone use at *fatal* crashes may be an important factor in analyzing the overall impact of legislative or policy limits on motorist cell phone use.

In comparing the 2002 crash statistics with those from May – October 2002, there is not much seasonal difference. The survey was conducted during warm months, yet the data compares favorably with annual data in terms of the number of crashes on each category of road. However, the 15.9% of crashes that involved deer may increase during the later autumn and early winter months on an annual basis.

TABLE II STATEWIDE MV4000 STATISTICS MAY – OCTOBER 2002

63,218 total crashes

- o 30,699 (48.6%) reported by city police departments
- o 24,247 (38.4%) reported by county sheriffs' offices
- o 3,365 (5.3%) reported by village police departments
- 2,691 (4.3%) reported by the State Patrol
- o 2,075 (3.3%) reported by township police departments

63,218 total crashes

- 404 (0.6%) fatal crashes
 - 61 (15.1%) reported by city police departments
 - 284 (70.3% of fatal crashes) reported by co. sheriffs' offices
 - 35 (8.7% of fatal crashes) reported by the State Patrol
 - 13 (3.2%) reported by township police departments
- 21,318 (33.7%) injury crashes
 - 11,260 (52.8%) reported by city police departments
 - 7,329 (34.4%) reported by county sheriffs' offices
 - 1,161 (5.4%) reported by village police departments
 - 791 (3.7% of injury crashes) reported by the State Patrol

41,496 (65.6%) property damage crashes

- 19,378 (46.7%) reported by city police departments
- 16,634 (40.1%) reported by county sheriffs' offices
- 2,195 (5.3%) reported by village police departments
- 1,865 (4.5% of pd crashes) reported by the State Patrol

63,218 total crashes

- o 23,611 (37.3%) occurred on urban city streets
- o 12,371 (19.6%) occurred on rural state highways
- o 7,917 (12.5%) occurred on urban state highways
- o 7,037 (11.1%) occurred on county trunk roads
- o 6,009 (9.5%) occurred on rural town roads
- o 2,228 (3.5%) occurred on urban interstate roads
- o 2,193 (3.5%) occurred on rural city streets
- o 1,852 (2.9%) occurred on rural interstate roads

63,218 total crashes

- o 35,460 (56.1%) involved motor vehicles in transport
- o 10,655 (16.9%) involved fixed objects
- o 9,094 (14.4%) involved deer
- o 5,986 (9.5%) involved "other"
- o 1,715 (2.7%) involved roll-overs

SURVEY RESULTS

Within the State Patrol's 4% of the statewide crashes that occurred between May and October of 2002, the *State Patrol's survey does not indicate a definable relationship between cell phone use and motor vehicle crashes.* The total survey numbers reporting cell phone use are not significant enough to make a determination that cell phone use is a *major* contributing factor in motor vehicle crashes, or if hands-free cell phones are safer to use than hand-held cell phones.

However, the results of the survey are significant because they illustrate that at this time, there is uncertainty as to the effect cell phone use has on motorist behavior. The development of any legislative proposal or new administrative policy must first explore other factors of cell phone use before embarking on a specific course of action. The discussion below focuses on the resultant data from the State Patrol survey, but additional information presented later will identify other factors.

The first look at the State Patrol data (TABLE III) reports that only 49 crashes (1.8% of State Patrol's 2,691 reported crashes) indicate that a cell phone was in use at the time of the crash. Of those 49 crashes, 17 crashes (0.6% of those investigated by the State Patrol) indicated that a hand-held cell phone was in use at the time of the crash and may have been a possible contributing circumstance (PCC) of the crash. Only 7 crashes (0.3%) indicated that a hands-free cell phone was in use at the time of the crash and may have been a possible contributing cause (PCC) of the crash. In 25 of the crashes (0.9%), the officer indicated that a cell phone was in use but in his/her opinion, it was not a contributing circumstance of the crash. The remaining 98.2% of the crashes investigated by the State Patrol report that for 2,537 crashes (94.3%) no cell phone was reported to be in use at the time of the crash. There were 105 crashes (3.9%) that did not record cell phone use information.

It is important to note that the results of the survey may have lower total numbers for cell phone use than previously expected. That may be partially due to the fact that the survey relied on a "self-reporting" procedure that gave the motorists at the crash site the responsibility to answer questions posed by the State Patrol officer about her/his cell phone use rather than relying on the officer's own observations. Similar to questions about seat belt use, the answers to questions about cell phone use rely on the honesty and memory of the motorists involved.

TABLE III details the State Patrol crash reports and illustrates no discernable correlation between cell phone use and traffic volume or between cell phone use and crash severity or type due to the infrequency of reported cell phone use. The table also illustrates that as previously discussed, due to the primary focus of State Patrol enforcement on rural Interstate and state trunk roads, most crashes and

reported cell phone use occurred on Interstate and rural roads where there is less congestion and fewer intersections. Only one crash reported a fatality for which a cell phone was in use at the time of the crash, but the cell phone was not considered as a **possible contributing circumstance (PCC)** of the crash.

TABLE III STATE PATROL CRASH LOCATION, TYPE AND SEVERITY MAY - OCTOBER 2002 2,691 CRASHES

- 17 crashes (0.6%) reported use of hand-held cell phones that were PCCs
 - 7 crashes (0.3%) reported use of hands-free cell phones that were PCCs
 - 25 crashes (0.9%) reported use of cell phones that were not PCCs 2,537 crashes (94.3%) reported no cell phone use 105 crashes (3.9%) did not record cell phone use
- 1,253 crashes (46.6%) occurred on Interstate-rural roads
 - o 23 crashes (1.8%) reported cell phone use of which 10 were handheld cell phones that were PCCs and 5 were hands-free cell phones that were PCCs;
 - o 1,192 crashes (95%) reported no cell phones in use at time of the crash.
- 682 crashes (25.4%) occurred on rural state highways
 - o 10 crashes (1.5%) reported cell phone use of which 3 were handheld cell phones that were PCCs and 1 was a hands-free cell phone that was a PCC.
 - o 642 crashes (94%) reported no cell phone in use at time of the crash.
- 2,290 crashes (85%) occurred at non-intersections
 - o 40 crashes (1.7%) reported cell phone use of which 15 were handheld cell phones that were PCCs and 5 were hands-free cell phones that were PCCs.
- 1,000 crashes (37%) involved collision with another my in transport
 - o 21 crashes (2.1%) reported cell phone use of which 8 were handheld cell phones that were PCCs and 5 were hands-free cell phones that were PCCs.
- 700 crashes (26%) occurred when a motor vehicle struck a deer
 - o 7 crashes (1.0%) reported cell phone use of which 2 were hand-held cell phones that were PCCs and 1 was a hands-free cell phone that was a PCC.
- 537 crashes (20%) occurred when a motor vehicle struck a fixed object

- o 11 crashes (2.0%) reported cell phone use of which 5 were handheld cell phones that were PCCs.
- 184 crashes (6.8%) occurred resulted in a vehicle roll-over
 - o 6 crashes (3.3%) reported cell phone use of which 2 were hand-held cell phones that were PCCs and 1 that was a hands-free cell-phone that was a PCC.
- 1,865 crashes (69%) resulted in property damage
 - o 27 crashes (1.4%) reported cell phone use of which 9 were handheld cell phones that were PCCs and 4 that were hands-free cell phones that were PCCs
 - o 1,753 crashes (94%) reported no cell phone in use at time of crash.
- 791 crashes (29%) resulted in some injuries to the motorists
 - o 21 crashes (2.7%) reported cell phone use of which 8 were handheld cell phones that were PCCs and 3 were hands-free cell phones that were PCCs.
- 34 crashes (1.3%) resulted in at least one fatality
 - o 1 crash (3%) reported cell phone use but it was not considered a PCC of the crash.

Other factors related to crash frequency and severity must also be taken into consideration when reviewing crash statistics. Since unsafe driving when using a cell phone can be cited under s.346.89(1), Wis.Stats., as "inattentive driving", it is important to identify reported crashes that identified "inattentive driving" as a possible contributing circumstance (PCC) of the crash or the driver was issued a citation for inattentive driving. Note that "inattentive driving" does not always indicate cell phone use. Inattentive driving can also result from many other kinds of distractions encountered by a driver such as picking things up from the floor of the vehicle, tuning the radio, checking the kids in the back seat, eating, feeling drowsy, talking to a passenger, and looking at something out the window.

For the time period of May – October 2002, the State Patrol considered inattentive driving a PCC or cited a driver for "inattentive driving" (not just caused by use of cell phones) at 664 crashes, resulting in 8 fatalities and 519 people injured. These 664 crashes represent 25% of the 2,691 crashes State Patrol reported on their MV4000's. Since the MV4000 data cannot directly link cell phone use to a specific driver involved in the crash, the data is not able to indicate if the driver that was using a cell phone was either cited for inattentive driving or if the cell phone use was a PCC for a crash that reported inattentive driving. However, the data does indicate that:

• For the 25 crashes where a cell phone was in use but was not a PCC, 5 of those crash reports noted inattentive driving as a PCC;

- For the 17 crashes where a hand-held cell phone was identified as a PCC, 11
 of the crash reports noted inattentive driving as a PCC;
- For the 7 crashes where a hands-free cell phone was identified as a PCC, 3 of the crash reports noted inattentive driving as a PCC.

In summary, while inattentive driving appears to be a factor in unsafe driving which often results in crashes, the extent of cell phone use causing inattentive driving is indeterminable from this survey.

OTHER FACTORS

The State Patrol survey only recorded the number of crashes reported on MV4000s for which a cell phone was in use and if that cell phone use was a possible contributing circumstance of the crash. This narrow survey does not address the entire problem of cell phone use as it contributes to inattentive driving that does not result in a crash, or its connection to future technologies. A more thorough review of other current studies combined with perhaps some further Wisconsin surveys must first be undertaken before any definite action is proposed to limit or curtail motorist cell phone use. The State Patrol's survey indicates by its inconclusiveness that many variables are integral to the specific issue of cell phone use by motorists and the general issue of distracted driving.

A brief review of studies recently conducted throughout the United States indicates that there are some important issues to discuss and hard decisions to be made relating to cell phone use. Each study seems to indicate that cell phone use is indeed a problem for motorists and often leads to inattentive driving, but the magnitude of the problem has yet to be adequately identified. Cell phone use must be viewed both as a distraction itself and as one variable within the entire issue of "inattentive driving" or "distracted driving". There are also disagreements among the studies on the comparative safety of hands-free cell phones, the promotion of overall bans on all technologies for drivers, interest in other driver distractions, overall driver experience, and how best to collect empirical data.

A June 2003, report from the **National Transportation Research Board** (NTSB) made a strong recommendation that all states pass laws prohibiting inexperienced drivers from using cell phones while driving. Joseph Osterman, director of NTSB's Office of Highway Safety stated that "We think that inexperienced drivers should do nothing more than concentrate on the driving task." The NTSB report indicated that "drivers who are distracted will respond up to 1.5 seconds later to a hazard on the road" than those who are not using cell phones. The NTSB is careful, however, not to recommend a general ban on cell phones. Board chairwoman Ellen Engleman states that "We don't want to be simplistic...saying cell phones are all bad...We need to find out facts and not

come to a conclusion too fast." New Jersey and Maine are the only states so far to have passed laws prohibiting drivers with learners' permits from using cell phones or other wireless devices while driving and only New York band all drivers from using hand-held cell phones. The NTSB recommendations on driver distractions include:

- Enact laws that bar novice drivers with learner's permits and provisional or intermediate licenses from using cell phones while driving;
- All drivers education courses should include warnings about the dangers of driving distractions, such as cell phones;
- Require the National Highway Traffic Safety Administration to track and analyze the scope and impact of cell-phone related accidents;
- Have states add driver distraction codes, including one for cell phone use, to their traffic accident investigation forms;
- Develop a nationwide media campaign stressing the dangers of distracted driving.

Some of the other studies that may be useful in further research include:

<u>Virginia</u>: One of the most recent studies was conducted by the Virginia Commonwealth University for the Virginia Department of Motor Vehicles. That study's headline states "VCU finds cell phones are not the leading cause of distracted driving." After more than 2,700 crashes involving distracted drivers and almost 4,500 drivers studied, the study results indicate that cell phone use ranked sixth on the list of the most important "distracted driving behaviors." Ranking first, with the factor contributing to 16% of the distracted driver crashes, was "looking at crash, vehicle, roadside incident or traffic", followed by driver fatigue (12%), "looking at scenery or landmarks" (10%), passenger or child distraction (9%), and adjusting radio or changing CD or tape (7%). Cell phone distraction contributed to 5% of the distracted driver crashes. On an annual basis, overall driver distraction accounts for "roughly 13% of all traffic crashes in Virginia."

<u>University of Utah:</u> Psychologists from the University of Utah conducted a study published in the March 2003 issue of the *Journal of Experimental Psychology: Applied* and in the February – March 2003 issue of the National Safety Council's *Injury Insights*, that identified "inattention blindness" as a vital factor in safe driving. The study states that " 'inattentive blindness' makes drivers less able to process visual information" and "Even when participants [drivers] are directing their gaze at objects in the driving environment, they may fail to 'see' them because attention is directed elsewhere." Thus, the findings indicate that motorists who use hands-free cell phones and hand-held cell phones are "equally impaired" and miss or react slowly to traffic signals more than motorists who do not use cell phones. Specifically, the study showed that cell phone users took longer to brake, are less attentive to the driving environment, don't "see" their surroundings, and had less subconscious memory. Similar

findings were identified in a recent study from the psychology department of the **University of Kansas**.

University of North Carolina: The Highway Safety Research Center of the University of North Carolina conducted two studies of motorist cell phone use in North Carolina. The first study was conducted in 2001 and concluded that "cell phone use while driving does elevate the risk of a crash... Using cell phones slows reaction times and degrades drivers' tracking abilities. But there is wide disagreement about the magnitude of that increased risk and whether hands-free cell phone use is safer than hand-held." The study also found that at any given time, 3.1% of the people on North Carolina roads are using their cell phones while driving, which compares with the National Highway Transportation Safety Administration study that estimates national cell phone use while driving at 3%. The second study conducted in the summer of 2002 estimated that "cellular telephones are involved in at least 0.16 percent of crashes occurring in nonmetropolitan areas of the state, or about one in 623 reported crashes." These cell phone drivers' violations most commonly identified included failure to reduce speed, traffic signal violations, speeding, following too closely and failure to yield.

National Conference of State Legislature's Driver Focus and Technology Forum: The final, March 2002, report of the Driver Focus and Technology Forum attempted to provide a "comprehensive guide and leading source of current information" for legislators and interested persons on "issues of driver distraction and traffic safety." In this report, the executive director of the conference noted that "Technology has brought great advantages to drivers in need of emergency service while at the same time, in the hands of uneducated users, has caused safety concerns." This comment illustrates some of the "big picture" concerns regarding cell phone use by motorists. After the eight-month study, these concerns are identified by the Forum members in their fourteen recommendations:

- 1) Federal law governs equipment embedded in motor vehicles. Driver behavior, however, should be a state issue.
- 2) "States, rather than local jurisdictions, should decide whether to regulate the use of wireless telephones and other communications, information and entertainment technology in motor vehicles."
- 3) Drivers should not have access to traditional broadcast televisions or other embedded technologies that are not intended for driver use.
- 4) No regulations should prevent a driver's use of cell phones in emergency situations.
- 5) Any legislation should consider including automatic crash notification systems.
- 6) Driver education programs must include instruction on driver distractions.
- 7) Safety groups should be included when developing educational materials.
- 8) All states should collect empirical data related to driver distractions on crash report forms.

- 9) "Academic studies such as driving simulators, road tests and epidemiological research should supplement information obtained from crash reports."
- 10) All drivers should receive educational materials on driver distractions.
- 11) Federal and state governments should work with technology industries and federal and state governments, as well as industry should engage in specific research related to cell phone use.
- 12) Teenage and inexperienced drivers are more susceptible to driver distractions, including cell phones and other technologies.
- 13) School districts should be encouraged to provide cell phones for school bus drivers for use in emergency situations.
- 14) Any enforcement of legislative restrictions on motorist cell phone use should be phased in "to allow the consumer enough time to adjust to restrictions."

AAA: The American Automobile Association (AAA) recently compiled information from various studies nationwide, on the issue of motorist cell phone use. Among the information gathered, AAA noted that the National Highway Safety Administration (NHTSA) estimates that from 25% - 50% of the nation's crashes involve distracted drivers; these distractions include eating while driving, using cell phones, managing children, conversations with passengers, reading maps, and listening to radios, etc. And due to the increased popularity of cell phones and highly publicized crashes, there is a "heightened concern as to the need to minimize driver distractions." Yet, the cell phone is not listed as the **primary distraction**; findings indicate that "no single distracter predominates beyond listening to / tuning radios and eating." More importantly, the various studies contend that "psychomotor tasks", or activities that cause drivers to take their eyes from the road "are the major contributor to accidents involving driver distraction." Included however, in the list of distractions, is the time that the driver is engaged in "intellectual preoccupation", such as carrying on a conversation on a cell phone, either hand-held or hands-free. This intellectual preoccupation can delay reaction time, inhibit detection of hazards or shrink the normal margin of safety.

<u>Japan:</u> Two studies conducted in Japan in 2001 indicate that the use of cell phones by motorists does delay driver reaction time, compromises the mental attention drivers give to their driving, draws the drivers eye from the visual field of driving, and increases unstable driving. These studies employed the techniques of driving simulations along with the study of driving on "real" roads and report that "using a cellular telephone while driving may cause a collision because it delays visual information processing by the driver." The driver experiences mental distractions both with hand-held cell phones and hands-free cell phones that compromise the driver's skills and safe driving habits.

California: Two different studies conducted by the California Highway Patrol (CHP), in 1997 and 2002, approached the issue of motorist cell phone use. 1) The 1997 paper was a review of cell phone use studies found in the bi-monthly publication titled Accident Analysis and Prevention. The conclusion reached by CHP was that though "risks appear to be higher among younger, older, and inexperienced drivers...none of the researchers were able to state that cellular telephone use causes traffic collisions." In short, the authors of the various studies all agreed that more studies are needed. 2) The 2002 study was conducted using the CHP 555, Traffic Collision Report, which is similar to Wisconsin's MV4000. The intent of the six-month data collection was to collect "information as to whether a cellular telephone or other driver distraction or inattention is a known or suspected associated factor to the cause of the traffic collision." The study reported that out of 5,677 persons involved in collisions identified as being inattentive and adding to the cause of the collision, 11% of those persons were inattentive due to cell phone use. This was the greatest percentage for inattention and was a factor in 6 fatalities. The study goes on to state that the data collected does not enable determination of "how many of the collisions, if any, would have been avoided without the [use of cell phones]." And as with other studies, this study stated that the lack of comparative data makes it "impossible to answer questions relating to trends."

NHTSA: A 1997 report by the National Highway Safety Administration (NHTSA) concluded that "in some cases the inattention and distraction created by the use of a cellular telephone while driving is similar to that associated with other distractions in increasing collision risk." Included in that conclusion is the notation that among the several factors by which cell phone use can increase the risk of collision is that "conversation appears to be most associated with the collisions reviewed." That is, the act of talking was the main distracting feature of cell phone use. The report also states that there was "insufficient data to indicate the magnitude of any safety-related problem associated with cellular telephone use while driving" which is similar to the conclusion reached by the limited Wisconsin State Patrol study. However, the NHTSA report concludes its report by identifying a variety of options that could be employed to enhance the safe use of cell phones. The options include "educational, research, enforcement and legislative considerations and initiatives" each with the intent to "better define the nature and magnitude of any potential traffic safety problem and assist the public, the states and the industry in making informed decisions on how best to address any issues related to cellular telephone use and driving."

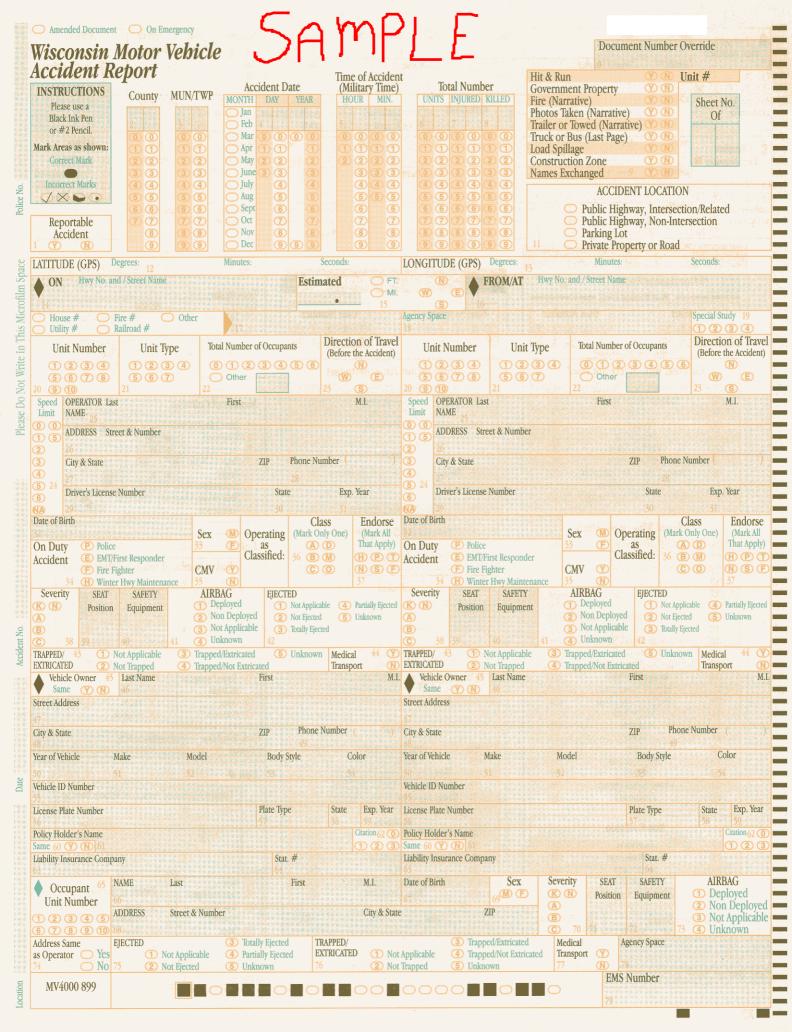
The above information represents only a fraction of the literature available regarding cell phone use while driving, driver distractions, and inattentive driving. While not complete, the list of other variables integral to a comprehensive study of distracted or inattentive driving includes:

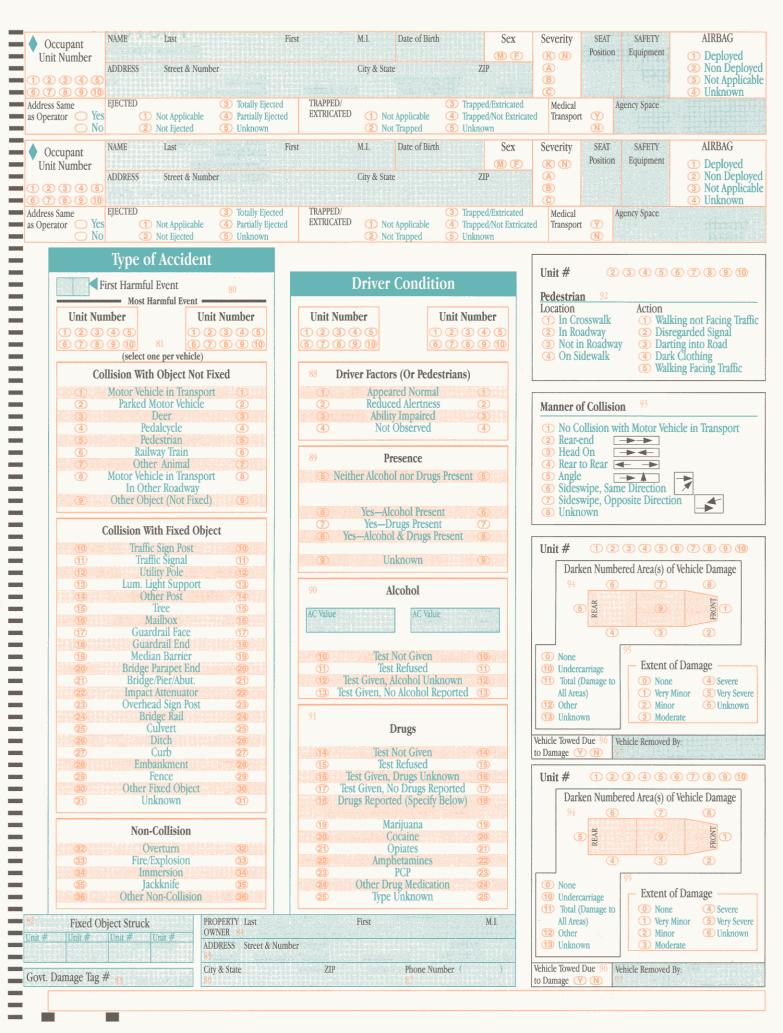
- Efforts to identify the magnitude of the problem;
- Identification of other driver distractions;
- Intensity of mental distractions:
- Impact of driver experience;
- Efforts at public education;
- Identification of future communications devices;
- Effective enforcement.

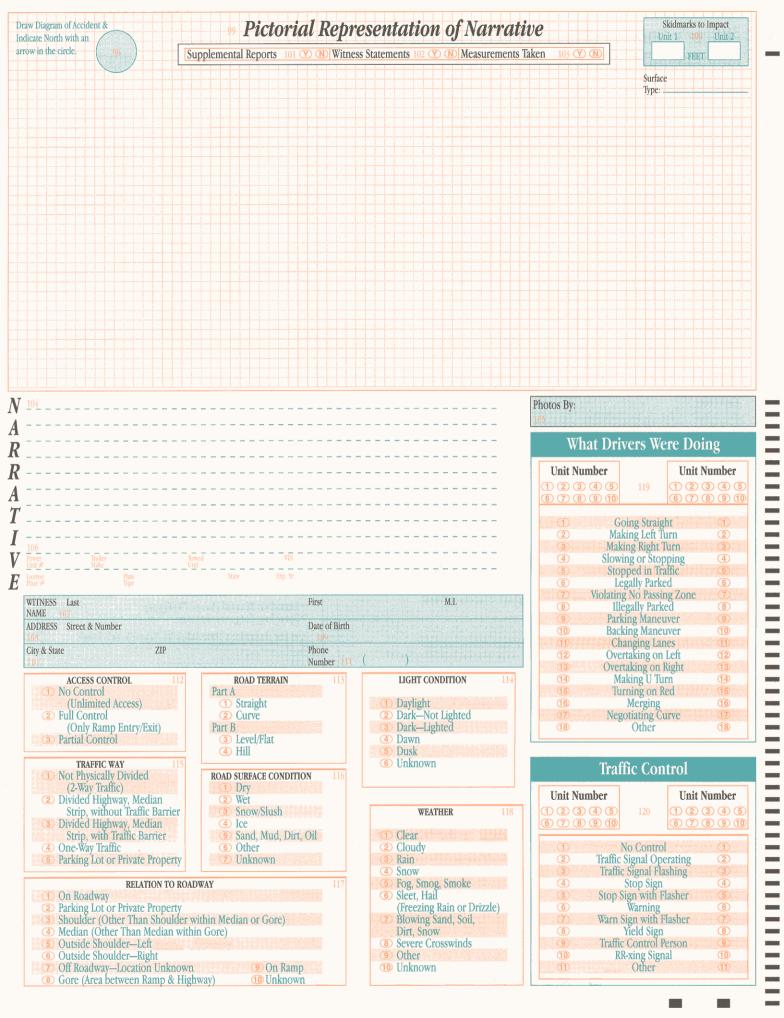
CONCLUSION

While the Department of Transportation and Wisconsin State Patrol survey did not provide a definitive conclusion on the relationship of cell phone use to motor vehicle crashes, it did provide a first step in a review of the issue. The lack of striking data that points unquestionably at cell phone use as the cause of crashes leads us to believe that there are many more variables that must be discussed before any decisions are made on how best to either limit motorist cell phone use or enhance safety for cell phone users. The data indicates that cell phone use is indeed a contributing factor to motor vehicle crashes, as are other reasons for "inattentive" or "distracted" driving, and that, in itself, is an important finding.

However, taking into consideration the limited scope of the survey and after reviewing the studies conducted by other agencies and institutions on cell phone use, it is clear that there are many variables involved and alternative approaches for alleviating the problem. The Wisconsin legislature, law enforcement community and safety professionals must take this "first step" survey data and use it to encourage further consideration of alternative ways to ensure the safe, and perhaps limited, use of cell phones on Wisconsin's highways.







Document Number Override Officer's Opinion of Possible Contributing Circumstances **Driver Factors** Vehicle Factors **Highway Factors Unit Number Unit Number Unit Number Unit Number Unit Number Unit Number** 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1 2 3 4 5 1) (2) (3) (4) (5 678910 678910 678910 6 7 8 9 10 678910 6 7 8 9 10 N/A N/A N/A N/A N/A N/A **Exceeding Speed Limit** Brake System Snow, Ice or Wet Speed Too Fast/Condition Narrow Shoulder Tires Fail to Yield Right of Way Inattentive Driving Low Shoulder Steering System Turn Signals Soft Shoulder (4) (4) (4) Following Too Close Head Lamps Loose Gravel Rough Pavement Improper Turn Stop Lamps (6) (6) 6 (6) Left of Center Tail Lamps Debris From Prior Accident Disregarded Traffic Control Disabled in Prior Accident Other Debris (8) Improper Overtaking Other Disabled (9) Sign Obscured or Missing (9) Unsafe Backing Narrow Bridge Mirrors Failure to Have Control Suspension System Construction Zone **Driver Condition** Visibility Obscured Other Other Other Time Arrived Time Notified OFFICER INFORMATION Date Notified Date of Report (Military Time) (Military Time) MONTH YEAR HOUR MIN. HOUR MIN. MONTH Feb Law Enforcement Agency Address Mar Mar Apr Apr City & State ZIP May 2)(2 2)(2 May Tune Tune July 4) (4 July (4 (4 4) (4 Phone Number Aug Aug Sep (6 6 (6 (6) 6 Sept 6 Oct Oct **Enforcement Agency** Officer ID # Nov Nov (8 (8) (8) (8) Dec Truck & Bus Accident Information (This Section Must Be Completed for Each Truck or Bus Involved in this Accident.). When To Use This Section: Did the accident involve:... **Hazardous Material Information** A truck with at least two axles and six tires? • Hazardous Material Class Numbers (1-2digit): A truck with a hazardous materials placard? A bus designed to carry 16 or more persons, including the driver? Hazardous Material "UN" Numbers (4 digit): STOP! If <u>all</u> the responses to Part A are "NO" do not complete this Truck & Bus Accident Information Section. If there are <u>any</u> "YES" answers, continue to Part B. • Hazardous Material Placard Displayed? Hazardous Cargo was Released? YW Any person who was fatally injured? (Y) (N) List the Hazardous Material(s) by Name in this Load: Any injured person who required transport for immediate medical treatment? (Y) (N) One or more vehicles that had to be towed from the scene as a result of the accident? List the Name(s) of <u>Released</u> Hazardous Material(s): STOP! If <u>all</u> the responses to Part B are "NO" do not continue. If there are <u>any</u> "YES" answers, please complete this Truck & Bus Accident Information Section . . . Carrier Identification Numbers Source: Carrier Information Vehicle Side **Shipping Papers** • Interstate Carrier? ICC MC Trip Manifest Driver Log Book Gross Vehicle Weight Rating Total # of Axles Vehicle Information Vehicle Configuration Cargo Body Type Single unit truck + 3 axles SEQUENCE OF EVENTS FOR THIS VEHICLE Ran off Road Collision Involving Motor Vehicle in Transp. Jackknife Collision Involving Parked Motor Vehicle Overturn (Rollover) Collision Involving Train Cargo Tank Downhill Runaway Collision Involving Pedalcycle Cargo Loss or Shift Collision Involving Animal 1234 **Explosion** or Fire Collision Involving Fixed Object Separation of Units Collision Involving Other Object Collision Involving Pedestrian